



IBM Software Group

# ***IBM WebSphere® Data Interchange V3.3***

## ***Problem Determination Overview***



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This presentation will give an overview for problem determination.

## Agenda

- Self help
- WDI support process
- Problem determination techniques
- Interpreting WDI messages
- Case studies



The presentation will review options for self help, the WebSphere Data Interchange (WebSphere Data Interchange) support process, problem determination techniques, interpreting WDI messages, and review some case studies.

## Section

# *Self Help*

## Problem Determination Overview

- Self Help Support Sites
  - ▶ WebSphere Data Interchange website
  - ▶ <http://www.ibm.com/websphere/datainterchange>
- IBMLink and SupportLink for z/OS
  - ▶ <http://www.ibm.com/ibmlink>
- Electronic Service Request (ESR) for Multiplatform
  - ▶ <http://www.ibm.com/software/support/help.html>
- Downloading fixes:
  - ▶ z/OS: <http://www.ibm.com/servers/eserver/support/zseries/fixes/>
  - ▶ MP: <http://www.ibm.com/software/integration/wdi/downloads/>
  - ▶ Client: <http://www.ibm.com/software/integration/wdi/downloads/>



The following URLs can be used to get help, request electronic service requests, and download code fixes.

## Problem Determination Overview

- Self Help Support Sites (Continued)
  - ▶ <http://www.ibm.com/websphere/datainterchange>

The screenshot shows the IBM WebSphere Data Interchange website. The main content area is titled "WebSphere Data Interchange" and includes an "Overview" section. The overview text states: "IBM WebSphere® Data Interchange V3.3 delivers the latest and most capable stand-alone EDI translator in the market today. It reliably meets the high volume, throughput and performance requirements for EDI processing within multiple industries, while adding substantial new functionality." Below this, there are two bullet points: "V3.3 includes substantial new functionality for the Document Store, reporting and error handling, role and group-based management, and audit trails." and "V3.3 adds support for SOA". A blue arrow points to the "Support downloads" link in the "Use and maintain" sidebar.

The WebSphere Data Interchange website contains a support downloads selection.

## Problem Determination Overview

- Self Help Support Sites continued
  - ▶ Key features of WDI website:
    - Downloads: Click on, “Standards, host, client & Fix Pack downloads”
      - EDI Standards
      - Multiplatform fixes
      - WDI Client fixes
    - Library
      - WDI 3.3.1 Manuals and publications
      - WDI 3.2.1 Manuals and publications
    - Support
      - Search non-defect FAQ database, a.k.a. Technotes
      - Search defect APAR database
      - Product Requirement Form



The WebSphere Data Interchange website contains features for downloading standards, publications, as well as technical notes, defect database, and product requirements.

## Problem Determination Overview

- Self Help Support Sites continued
  - ▶ Search Capabilities
    - By default, search includes Technotes (FAQ), APARs (defect), Redbooks, etc. for only WDI
  - ▶ Check "Solve a problem" to limit search to only Technotes and APARs
    - – Next page provides refined search by "Document type"
  - ▶ Alternatively, when searching for defects, limit search by platform:
    - z/OS: Precede search string with 5655I4000
    - MP: Precede search string with 5724C5001



Search capabilities are available. To limit the search use the "Solve a problem" selection or limit the search by platform.

## Problem Determination Overview

- Self Help Support Sites continued
  - ▶ Other search features
    - 'Search all software support' to go beyond WDI
    - Advanced search offers
      - Boolean options
      - Limit results to Exclude/include APARs
      - Limit results within components
        - WDI 3.2 Client
        - WDI 3.2 for z/OS
        - WDI 3.2 MP
      - Limit results by modifying dates

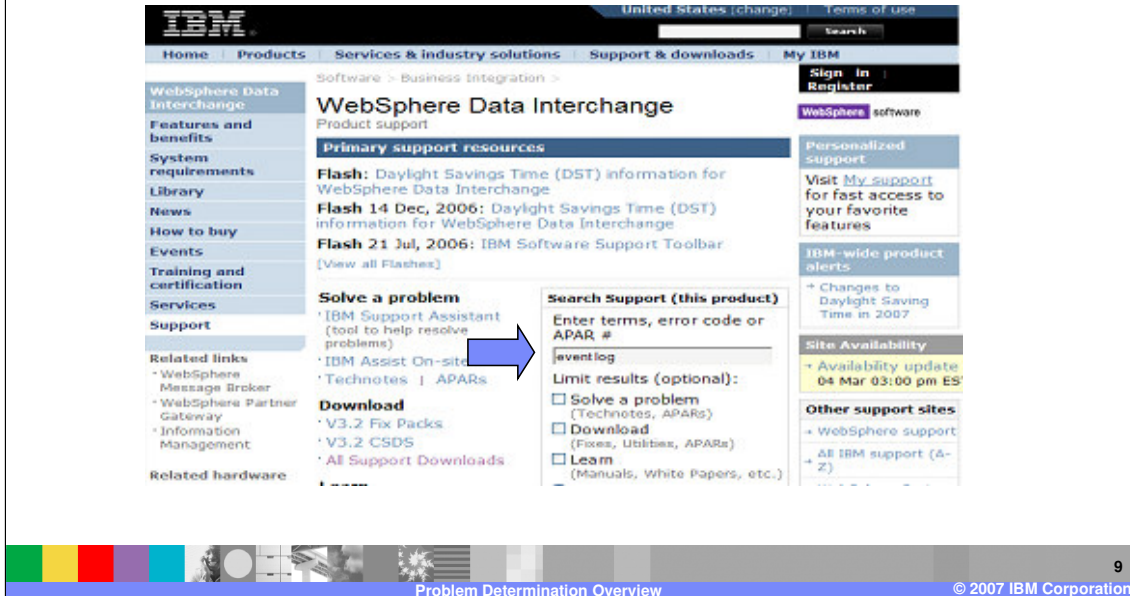


Using advanced searching function offers more selections to limit the search.



# Problem Determination Overview

- Search Capabilities Example



This is an example of limiting the search to the term “event log”.

## Problem Determination Overview

- Search Capabilities Example

The screenshot displays the IBM WebSphere Data Interchange search interface. The search query is 'event log'. The 'Document type' dropdown menu is open, showing options: 'All documents', 'Downloads and drivers', 'Product information and publications', and 'Troubleshooting'. A blue arrow points to this dropdown. The search results show 1 item found, with a title 'SQL to delete rows from Event log Tablespace (EDIELOG)' and a modified date of 2004-08-30. The item description reads: 'Event log table (EDIELOG) is too large to run PERFORM REMOVE LOG ENTRIES. There are over 3 million rows in the table causing REMOVE to run an exorbitant amount of time. How can this table be brought down to a more manageable size? [ More items like this found in Application Integration and Connectivity ]'.



There is a drop down menu to limit the search by document type.

## Problem Determination Overview

- Search Capabilities Example

WebSphere Data Interchange

Search within results for: **event log**  
 Optionally, limit results by choosing one or more of the items below.

**Additional search terms:**  **Document type:**

**Sort results by:**

\* [New technical support search](#) \* [Advanced search](#) \* [Downloads & drivers search](#)

**Product category:**

1 - 10 of 63 items found\* [Next >](#) Modified date

[1] [SQL to delete rows from Event log Tablespace \(EDIELOG\)](#) 2004-08-30  
**Event log table (EDIELOG)** is too large to run PERFORM REMOVE LOG ENTRIES. There are over 3 million rows in the table causing REMOVE to run an exorbitant amount of time. How can this table be brought down to a more manageable size?  
 [ More items like this found in [Application Integration and Connectivity](#) ]

[2] OW48470: RETURN CODE 632 OCCURS IF LOGFLAG SET 2001-07-02

Additional search terms may be entered.

## Problem Determination Overview

- Search Capabilities Example

The screenshot displays the IBM WebSphere Data Interchange search interface. The search criteria are set to 'event log' and 'SQL', with 'All documents' selected for the document type. The results show 63 items found, with the first two items listed:

| Item ID | Search Result  | Modified date |
|---------|--|---------------|
| [1]     | <a href="#">SQL to delete rows from Event log Tablespace (EDIELOG)</a><br>Event log table (EDIELOG) is too large to run PERFORM REMOVE LOG ENTRIES. There are over 3 million rows in the table causing REMOVE to run an exorbitant amount of time. How can this table be brought down to a more manageable size?<br>[ More items like this found in <a href="#">Application Integration and Connectivity</a> ] | 2004-08-30    |
| [2]     | OW48470: RETURN CODE 632 OCCURS IF LOGFLAG SET   | 2001-07-02    |

This is the results of our example using “event log”, “SQL”, and all documents.

## Section

# ***WebSphere Data Interchange Support Process***

## Problem Determination Overview

- **WDI Support Process**
  - ▶ **Begins by opening a Problem Management Record (PMR)**
    - **USA Hotline: 1 -800-IBM-SERV (1-800-426-7378)**
      - Voice support
      - Two hour call-back between 8am–5pm in your time-zone for all severities. Off-shift support for severity 1.
      - Service agreement required for how-to and usage questions
    - **Worldwide directory: <http://www.ibm.com/planetwide/>**
  - ▶ **Electronic problem submission**
    - **Electronic Technical Response (ETR) for z/OS customers**
      - IBMLink, ServiceLink and SoftwareXcel - service agreement required
      - <http://www.ibm.com/services/us/its/pdf/swxcel.pdf>
    - **Electronic Service Request (ESR) for multiplatform**
      - Passport Advantage - service agreement required
      - <http://www.ibm.com/software/passportadvantage>



The Support process begins by opening a Problem Management Record (PMR). This can be done using the support hot line telephone support or electronic submission.

## Problem Determination Overview

- WDI Support Process
  - ▶ Define the problem
  - ▶ Gather background Information
    - Software levels of relevant products
    - What steps led to the failure?
    - Can the problem be recreated? Recreation steps?
    - Have any changes been made to the system?
    - Were any messages or other diagnostic information produced?
  - ▶ Gather relevant diagnostic information
    - Print file, joblog, operating system messages, storage dumps, traces, etc.
  - ▶ Determine the business impact, i.e. severity level



When reporting a problem define the issue as precisely as possible, provide background information such as software levels, recreation steps, recent changes to the environment, error messages produced. Diagnostic information for example the print file, job log, system dumps and WebSphere Data Interchange traces are also needed. The impact on your business identifies the severity level.

## Problem Determination Overview

- WDI Support Process

- ▶ Severity Levels

- Severity 1 - Critical Impact/System Down: Business critical software component is inoperable or critical interface has failed. This indicates you are unable to use the program resulting in a critical impact on operations. This condition requires an immediate solution.
    - Severity 2 - Significant business impact, this indicates the program is usable but is severely limited.
    - Severity 3 - Some business impact, this indicates the program is usable with less significant features (not critical to operations) unavailable.
    - Severity 4 - Minimal business impact, this indicates the problem causes little impact on operations or that a reasonable circumvention to the problem has been implemented.



The Severity levels are listed here.



## Problem Determination Overview

- WDI Support Process
  - ▶ Determine what files Support may need
    - If problem is reproducible:
      - Isolate problem to specific input transaction or message
      - Gather input file, print file, joblog, and export of map in tagged format selecting all associated objects
      - Include incorrect output file and expected output, if applicable
    - If not reproducible, as in a sporadic ABEND:
      - Gather input file, print file (joblog), and export of map in tagged format selecting all associated objects
      - Capture dump dataset:
        - z/OS add SYSUDUMP and CEEDUMP to JCL
        - AIX core dump
        - Windows application exception dump



This is a list of files that may be needed to identify the problem.

## Problem Determination Overview

- WDI Support Process
  - ▶ Post test files to Support Center's FTP server:
    - ECuRep: Enhanced Customer Data Repository:
      - <http://www.ibm.com/de/support/ecurep/mvs.html>
    - Replacement for testcase.software.ibm.com



You may post the files needed to reproduce the problem to the Support Center's FTP server.

## Problem Determination Overview

- WDI Support Process
  - ▶ Have the following information ready when calling or submitting a problem:
    - IBM Customer Number
      - The machine type/model/serial number
      - Company name
      - Contact name
      - Preferred means of contact (voice or email)
      - Background and diagnostic information
    - Support handbook
      - <http://techsupport.services.ibm.com/guides/webhndbk.pdf>
      - Fill out the “Problem Identification Worksheet” on page 23



This information is required when submitting a problem.

## Problem Determination Overview

- WDI Support Process
  - ▶ Defects managed via Authorized Program Analysis Reports (APAR) process
  - ▶ APAR is routed to appropriate development team.
  - ▶ If defect has high impact, a code fix is created for existing version/release and delivered via:
    - Program Temporary Fix (PTF) for z/OS customers
    - Corrective Service Delivery (CSD) for Multiplatform
  - ▶ If the defect has low impact, which does not require an immediate, permanent fix, we may defer the fix for a future release.



When a defect is identified, an Authorized Program Analysis Report (APAR) is created. The APAR is routed to the appropriate development team.

Code fixes are delivered via Program Temporary Fix (PTF) and Corrective Service Delivery (Service Pack). There are situations where the defect may be deferred to a future release.

## Section

# *Problem Determination Techniques*

## Problem Determination Overview

- Problem Determination Techniques
  - ▶ New map development
  - ▶ Incorrect output
  - ▶ Abnormal end
  - ▶ Runs on one system but not another
  - ▶ Interpreting WDI messages



This is a list of common problems.

## Problem Determination Overview

- New map development
  - ▶ Unexpected output
  - ▶ DT map, run with TRACELEVEL(A1) on PERFORM
    - Add EDIDTTRC DD to JCL
  - ▶ Send/Receive map: &SET DIVARTRACE 1
    - &SET DIEXPTRACE 1
  - ▶ Print map from WDI Client for a different perspective
  - ▶ Print data format, if applicable, to verify field offsets



Data transformation maps have a tracing function that will trace the message flow. The A1 trace will trace variables during the translation. Send Receive maps have a tracing function that will trace the mapping execution.

## Problem Determination Overview

- Incorrect output – existing map suddenly fails
  - ▶ What changed?
    - Was map changed or recompiled?
    - Was anything recently upgraded?
    - WDI server, client, DB2, WMQ, operating system, etc.
  - ▶ Check input for anomalies
  - ▶ Isolate input to single failed transaction or message
  - ▶ DT map, run with TRACELEVEL(A1) on PERFORM
    - Z/OS: Add EDIDTTRC DD to JCL
    - AIX or Windows: Add EDIDTTRC 'Set file' to command file
  - ▶ Send/Receive map: &SET DIVARTRACE 1
    - &SET DIEXPTRACE 1



With an existing map that suddenly fails, determine if anything has changed. Check for input file for situations not common. Try to isolate the message that is failing. Use the tracing functions to help identify where the problem occurs.



## Problem Determination Overview

- **Abnormal end**
  - ▶ Check System Server Platform under view menu
    - If Platform mismatch, recompile map and re-run translator
  - ▶ z/OS job completion = Sxxx or Uyyy
    - System ABEND lookup in documentation:  
<http://www.ibm.com/servers/resourceink>
    - User ABEND pertains to DT and are likely from LE
    - Check steplib
    - Check memory usage
    - Check XML Toolkit
  - ▶ AIX or Windows -- Signal 11 or core dump
    - Check libpath or path settings
    - Check memory usage



For abends, try recompiling the map and re-execution. Check the job completion code and JCL setup for z/OS jobs. For AIX and Windows check path settings and memory usage.

## Problem Determination Overview

- Runs on one system but not another
  - ▶ Compare maintenance levels
    - z/OS: Compare PTF listings from system programmer
    - Windows – check the registry
      - HKEY\_LOCAL\_MACHINE\SOFTWARE\IBM\WebSphere Data Interchange
      - key CurrentVersion=3.2.X, where X is the latest CSD number
    - AIX – issue command "lspp -L IBMWDIServer32"
  - ▶ Check map compile date
  - ▶ Check for differences in system capacity



With system mismatch, compare the maintenance levels, check the mapping compile date, and system capacity.

## Problem Determination Overview

- Interpreting WDI messages
  - ▶ Messages start with two character “service” designation, e.g. “TR” for Translator, “PS” for profile services
  - ▶ Check WDI Messages and codes for further information
  - ▶ Messages and Codes also lists return codes from each service
  - ▶ Messages and Codes Appendix A. provides a Translator Message (TRnnnn) example under, “Interpreting log entries”



WebSphere Data Interchange messages start with a two character designation. For example, Translator is “TR” and “PS” is profile services. The WebSphere Data Interchange Messages and codes manual contains useful information for interpreting messages.

## Section

# *Case Studies*

## Problem Determination Overview

- Case 1
  - ▶ ABEND U4036 – z/OS
    - Similar to system abend S0C4
    - If using IEFBR14, job condition code = 12
    - Pertains to Data Transformation only LE intercepted abend and writes dump to CEEDUMP
    - Likely cause, getmain failure
    - Check virtual storage in joblog
      - VIRT 728K SYS 360K **EXT 124100K** SYS 9800K
      - EXT is storage used above 16M line and is the key measure
      - Consider PAGE(Y) – maintenance required
      - Consider pageable AMM – maintenance required
    - REGION=0M only gives what happens to be available
    - REGION=nM assures that you get “n” megabytes



This is case study 1 for z/OS.

## Problem Determination Overview

- Case 1

```

BRWSE      KIRK00.CONF2005.JOBLOG.U4036          Line 00000020 Col 001 080
Command --->                                     Scroll ---> CSR
18.08.45 J0B06453 IEA995I SYMPTOM DUMP OUTPUT 217
217
217      USER COMPLETION CODE=4036 REASON CODE=00000002
217      TIME=18.08.41 SEQ=16573 CPU=0000 ASID=00CE
217      PSW AT TIME OF ERROR 47 01F00 887E2022 ILC 2 INTC 00
217      NO ACTIVE MODULE FOUND
217      NAME=UNKNOWN
217      DATA AT PSW 087E201C - 00181610 0A0D55C0 32E44770
217      AR/GR 0: 80C27B3E/84000000 1: 00000000/84000FC4
217      2: 00000000/154D399C 3: 00000000/154D3648
217      4: 00000000/00061198 5: 00000000/153A10C
217      6: 00000000/00000000 7: 00000000/1549B810
217      8: 00000000/16347A08 9: 00000000/153300A0
217      A: 00000000/16347AC8 B: 00000000/887E1F10
217      C: 00000000/00000000 D: 00000000/154D3C48
217      E: 808FA03C/887E1FF8 F: 00000000/00000002
217      END OF SYMPTOM DUMP
18.08.47 J0B06453 ACT510I KIRK00X.RUNDI          Step terminated - CC 0012
18.08.47 J0B06453 IEF404I KIRK00X - ENDED - TIME=18.08.47
PF 1=HELP      2=SPLIT      3=END      4=RETURN      5=RFIND      6=RCHANGE
PF 7=UP        8=DOWN      9=SWAP     10=LEFT      11=RIGHT     12=RETRIEVE
MB c                                                  04/015
  
```

This is the abend code location.

## Problem Determination Overview

- Case 2
  - ▶ Initialization failure
    - Pertains to any WDI utility function
    - Check for DB2 messages
      - Lookup SQLCODE and REASON codes in DB2 Messages and Codes on Resource Link
  - ▶ Z/OS job step Condition code = 120
    - DB2 message written to job log via WTO
    - Program failed attempting to initialize the Service Director



This is case study 2 for z/OS.

## Problem Determination Overview

- Case 2

```

SDSF OUTPUT DISPLAY KIRKWOOP JOB04419 DSID      2 LINE 7      COLUMNS 01- 80
COMMAND INPUT ==>
12.32.50 JOB04419 IEF403I KIRKWOOP - STARTED - TIME=12.32.50
12.32.51 JOB04419 + DSNT488I SQLCODE = -818, ERROR: THE PRECOMPILER-GENERATED
12.32.51 JOB04419 +791896A16048170 IN THE LOAD MODULE IS DIFFERENT FROM THE BI
12.32.51 JOB04419 +P 17153A09158C8E3C BUI FROM THE DERM EDIPSPD DSNT418I SOL
12.32.51 JOB04419 +03 SQLSTATE RETURN CODE DSNT416I SQLERRP = DSNXEPK SQL PROC
12.32.51 JOB04419 +TING ERROR DSNT416I SQLERRD = -200 0 0 -1 0 0 SQL DIAGNOSTI
12.32.51 JOB04419 +0N DSNT416I SQLERRD = X'FFFFFF38' X'00000000' X'00000000' X
12.32.51 JOB04419 +X'00000000' X'00000000' SQL DIAGNOSTIC INFORMATION
12.32.51 JOB04419 +Program failed attempting to initialize the Service Directo
code = 12.
12.32.51 JOB04419 +SQL code is -818
12.32.51 JOB04419 ACT510I KIRKWOOP.RUNDI          Step terminated - CC 0120
12.32.51 JOB04419 IEF404I KIRKWOOP - ENDED - TIME=12.32.51
12.32.51 JOB04419 SHASP395 KIRKWOOP ENDED
----- JES2 JOB STATISTICS -----
- 08 SEP 2005 JOB EXECUTION DATE
- 60 CARDS READ
- 170 SYSOUT PRINT RECORDS
PF 1=HELP      2=SPLIT      3=END      4=RETURN      5=IFIND      6=BOOK
PF 7=UP        8=DOWN       9=SWAP     10=LEFT      11=RIGHT     12=RETRIEVE
MA  g
32 Connected to remote server/host rahvsk.pok.ibm.com using lu/pool NRTK0441 an
  
```

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This is the SQL Code location.



## Problem Determination Overview

- Case 2
  - ▶ MultiPlatform returns RC=8 ERC=32
    - PS00400 Profile Services database error
    - Command Line window from ediservr provides reason
    - WDI adapter command window or .trace file



This is case study 2 for Multiplatform.

## Problem Determination Overview

- Case 2

```
Command Prompt
C:\download\ediserur\POXML5SR-EDI>ediserur <sample.cmd
PS00400: Profile Services database error.
91          MONOCASE
           008 400 -0818
*****
User Response: This error is reported during
initialization if the application fails to load
critical information from DB2.
If the sqlcode indicates a precompiler problem
(EG. -0818), please verify that the BIND step in
the installation process completed successfully.
If one of the configuration tables is missing (0100),
verify that the LOAD installation step was
successful, and check for the Profile or Code List.
*****
DI Translator Started, build date: Jun 3 2005
CE0010 RS0000*12***** CE LOC = CE0042 SERU NAME = MESSAGESSERU FUNC = 0000001
6   CB RC = 00000012   CB ERC = 00000515
CE0010 RS0000*12***** CE LOC = CE0042 SERU NAME = MESSAGESSERU FUNC = 0000001
6   CB RC = 00000012   CB ERC = 00000515
DI Translator Error. RC=8, ERC=32
DI Translator shutdown

C:\download\ediserur\POXML5SR-EDI>
```

This is the results of the translation execution.

## Problem Determination Overview

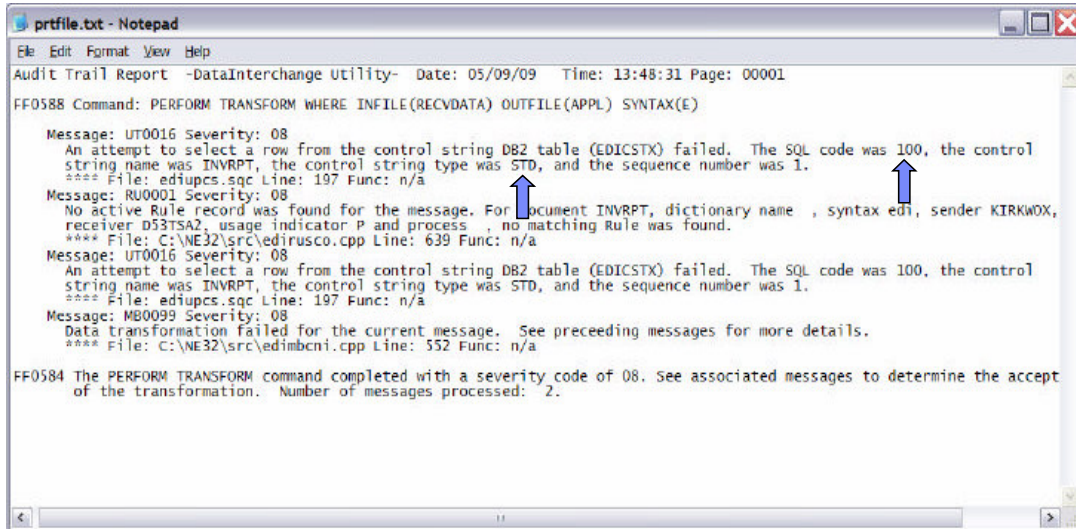
- Case 3
  - ▶ Data Transformation rule not found – EDI to ADF
    - UT0016 – STD (Standard) type control string not found
    - RU0001 – no active rule found
    - MB0099 – data transformation failed



This is case study 3.

## Problem Determination Overview

- Case 3



```
prtfile.txt - Notepad
File Edit Format View Help
Audit Trail Report -DataInterchange Utility- Date: 05/09/09 Time: 13:48:31 Page: 00001
FF0588 Command: PERFORM TRANSFORM WHERE INFILE(RECVDATA) OUTFILE(APPL) SYNTAX(E)

Message: UT0016 Severity: 08
An attempt to select a row from the control string DB2 table (EDICSTX) failed. The SQL code was 100, the control
string name was INVRPT, the control string type was STD, and the sequence number was 1.
**** File: edipups.sqc Line: 197 Func: n/a
Message: RU0001 Severity: 08
No active Rule record was found for the message. For document INVRPT, dictionary name , syntax edi, sender KIRKWOX,
receiver D53TSA2, usage indicator P and process , no matching Rule was found.
**** File: C:\NE32\src\edirusco.cpp Line: 639 Func: n/a
Message: UT0016 Severity: 08
An attempt to select a row from the control string DB2 table (EDICSTX) failed. The SQL code was 100, the control
string name was INVRPT, the control string type was STD, and the sequence number was 1.
**** File: edipups.sqc Line: 197 Func: n/a
Message: MB0099 Severity: 08
Data transformation failed for the current message. See preceding messages for more details.
**** File: c:\NE32\src\edimbcni.cpp Line: 552 Func: n/a

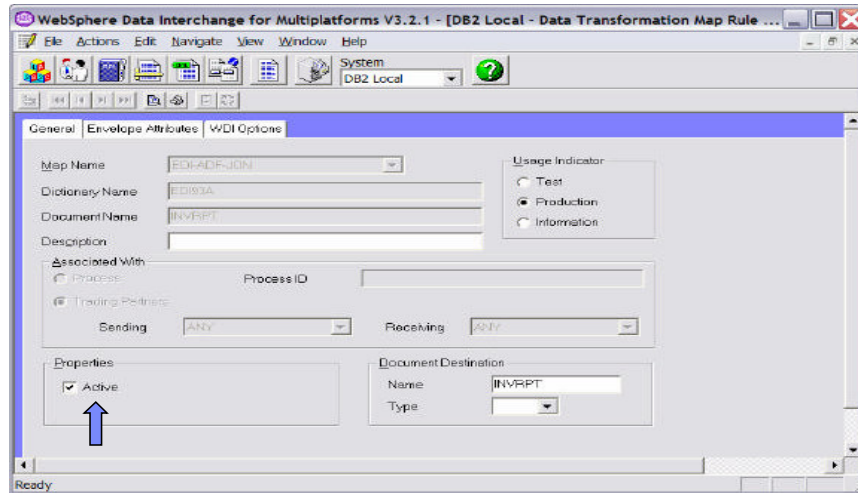
FF0584 The PERFORM TRANSFORM command completed with a severity code of 08. See associated messages to determine the accept
of the transformation. Number of messages processed: 2.
```

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The print file reports SQL code 100 for control string type Standard (STD).

## Problem Determination Overview

- Case 3



Check the Data Transformation Rule to ensure it is active.

## Problem Determination Overview

- Case 3

- ▶ EDI input:

UNB+UNOA:2+D53T KIRKWOX:ZZ+D53T

D53TSA2:ZZ+050513:0912+111'

UNH+11+INVRPT:D:93A:UN:EAN003'

: Version

:

UNT+14+11'

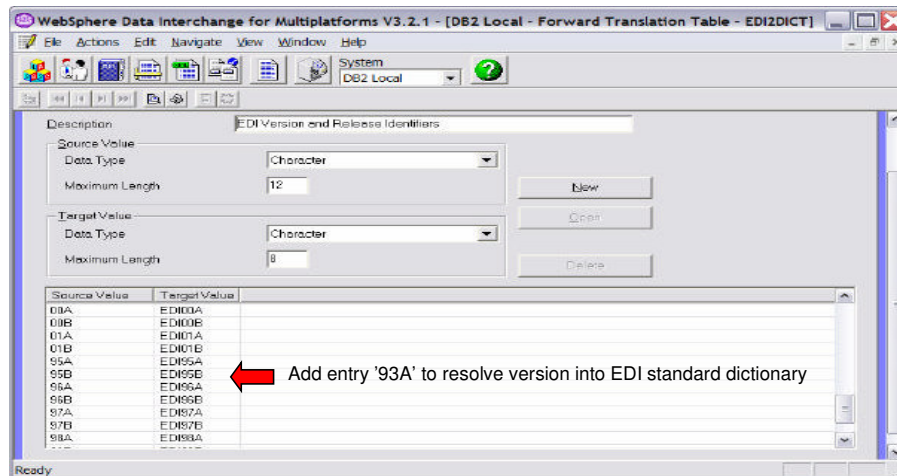
UNZ+1+111'



Check the input. In this example, you have EDIFACT with 93A for release number.

## Problem Determination Overview

- Case 3



Data transformation uses the EDI2DICT forward translation table to identify the standard dictionary and document. The value "93A" is missing from the table.

## Problem Determination Overview

- Case 3
  - ▶ Alternatively, add DICTONARY(EDI93A) to the PERFORM statement
    - All Input messages then must use the same standard dictionary
    - Not as flexible as using EDI2DICT forward translation table
  - ▶ Optionally, sending and/or receiving trading partner can be used to be selective when finding a matching rule
    - Sending trading partner commonly used
    - Otherwise, use ANY for both sending and receiving trading partners



An alternative is to add DICTONARY keyword to the PERFORM command but this is not as flexible as using the EDI2DICT table.



## Problem Determination Overview

- Summary
  - ▶ Utilize self help websites
  - ▶ New Technotes are being added
  - ▶ Still need help? Call WDI support
  - ▶ Review problem determination techniques to prepare for the call
  - ▶ Someday you will encounter one of these case studies



For problem determination use self help and technical notes. If you cannot resolve the problem call WebSphere Data Interchange support. Review the techniques described here and prepare for the call.

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